NWT Species at Risk

Action Plan

Boreal Woodland Caribou Conservation in the Northwest Territories 2010–2015

Prepared by the Department of Environment and Natural Resources

Photo by Anne Gunn

Minister's Message

The *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories* provides general goals and direction for conservation of the boreal population of woodland caribou (boreal caribou) in the Northwest Territories (NWT) for the next five years.

We are fortunate that boreal caribou are not currently considered to be at risk in the NWT and have habitat available throughout their range north of 60. The purpose of this Action Plan is to outline actions that management authorities in the NWT can take to retain boreal caribou as a part of our boreal ecosystem.

ENR will prepare a five-year Work Plan to implement the actions in cooperation with the Tłı̨chǫ Government, Wildlife Management Boards and other stakeholders. Implementing these actions will also contribute to the national recovery effort under the federal *Species at Risk Act*.

The Department appreciates the efforts of the many groups who provided comments, which helped improve and develop this final plan.

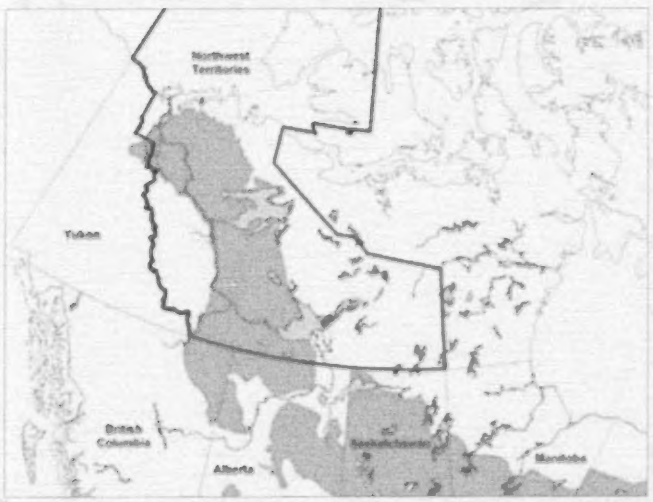
J. Michael Miltenberger
Minister
Environment and Natural Resources

Background

Boreal caribou exist across much of Canada. Habitat loss and reduced distribution in southern Canada contributed to the federal government listing boreal caribou as *Threatened* under the federal *Species at Risk Act* (SARA).

Although the federal listing of boreal caribou applies throughout Canada, boreal caribou in the NWT are not considered to be currently at risk. The NWT General Status Ranking Program ranked boreal caribou as "*Sensitive*". This designation is for species that are not at risk of extinction or extirpation, but may require special attention or protection to prevent them from becoming "*At Risk*"[1]. Based on traditional knowledge and scientific studies, there are an estimated 6,000 to 7,000 boreal caribou in the NWT occupying much of their historic range.

Because of the federal listing, a draft national *Recovery Strategy for the Woodland Caribou, Boreal Population, in Canada* (Environment Canada, in prep.) is being developed. Each jurisdiction in Canada with boreal caribou (the NWT, along with British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec and Newfoundland-Labrador) is participating in the development of the draft recovery strategy and is committed to the development and implementation of their own Recovery Strategies or Action Plans to address specific boreal caribou recovery or management concerns in their respective jurisdiction. Once the national Recovery Strategy is completed, the *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories* will be reviewed for federal SARA compliancy.



The range of boreal caribou in the Northwest Territories and surrounding regions.

[1] For more details, consult: www.enr.gov.nt.ca/_live/pages/wpPages/General_Status_Ranking_Program.aspx

Goals

Recognizing that boreal caribou, like other wildlife, are ecologically, culturally and spiritually valued in the NWT, the goals for conservation of boreal caribou are to:

1. Prevent boreal caribou from becoming a species at risk[2] in the NWT.
2. Maintain the current contiguous distribution of boreal caribou in the NWT for the benefit of all NWT residents and future generations.
3. Manage boreal caribou and their habitat to contribute to the healthy biodiversity of the NWT.

Implications of these goals are:

1. Maintaining the current distribution and continuous habitat of boreal caribou will require management of natural and human impacts at the landscape level through the existing regulatory regime to maintain connectivity.
2. A better understanding of the combined effects of natural and human impacts (including harvest) and predation (including harvest) on boreal caribou population dynamics is needed.
3. Population trends for boreal caribou will be monitored to ensure population numbers remain within the natural range of variation.
4. The conservation of boreal caribou in the NWT can only be achieved with the cooperation and support of First Nations, Inuvialuit, NWT wildlife co-management boards, the Tłı̨chǫ Government, regulatory boards, NWT residents and other stakeholders.

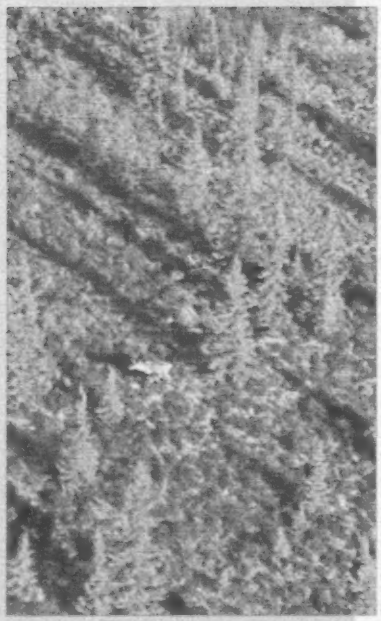


Photo by Deb Johnson

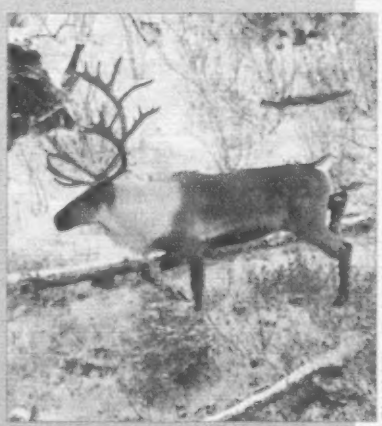


Photo by John Nagy

[2] According to the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) a species may be determined at risk if there is a declining total population over three generations or 10 years, whichever is longer, OR a small distribution with a decline or fluctuation in numbers, OR a small total population size with a decline in numbers, OR a very small or restricted number of mature individuals with a restricted area of occupancy, and other factors. There are more specific criteria that accompany these provisos. Consult www.cosewic.gc.ca for more details.

Threats

Photo by Mike Bly

Photo by Gordon Court

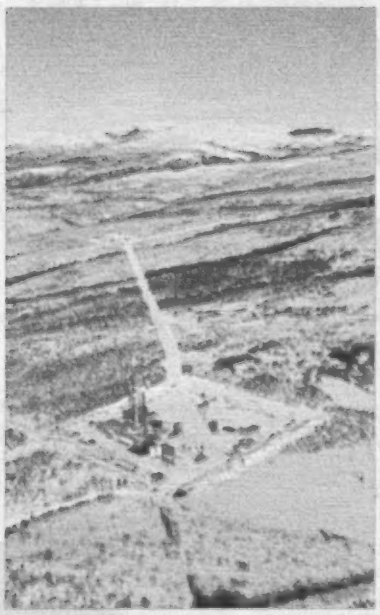


Photo by Boyan Ilnitzki

To help identify threats to boreal caribou in the NWT, and actions to address those threats, meetings were held with wildlife co-management boards and almost every community in the NWT.

The threats identified included:

- direct loss of habitat through landscape change resulting from human activities;
- landscape changes caused by wildfire, natural disturbances or climate change;
- avoidance or reduced use of specific areas of habitat as a result of disturbances caused by human activities;
- vehicle collisions;
- parasites and disease;
- predation, including changes in the numbers and densities of predators and alternate prey species; and
- harvesting.

Recommended Tools and Actions to Address Threats

These actions reflect community concerns and opinions based on traditional knowledge and use the best scientific knowledge available. All perspectives were equally considered for each action. All actions will be reviewed periodically to accommodate new information and objectives.

A. Habitat Planning and Management

Traditional knowledge and scientific studies have shown that boreal caribou in the NWT need large areas of suitable habitat. Many communities know of areas that are important for boreal caribou (e.g. Cameron Hills) and understand landscape changes caused by wildfires or human activities could affect boreal caribou. The *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories* takes a landscape perspective. To conserve boreal caribou in all areas of the NWT, land use activities may have to be limited over large tracts of habitat. Industry and other human activities can occur within boreal caribou habitat if these activities, when considered along with natural habitat change, are compatible with boreal caribou conservation.

Environment and Natural Resources (ENR) monitors natural habitat changes and disturbances associated with climate change, and will continue to do so. The implications of climate change will be worked into actions when appropriate and as new information becomes available. A changing climate may have unforeseen effects on boreal caribou habitats and populations, and may result in changes northern regulators and managers have little to no ability to control.

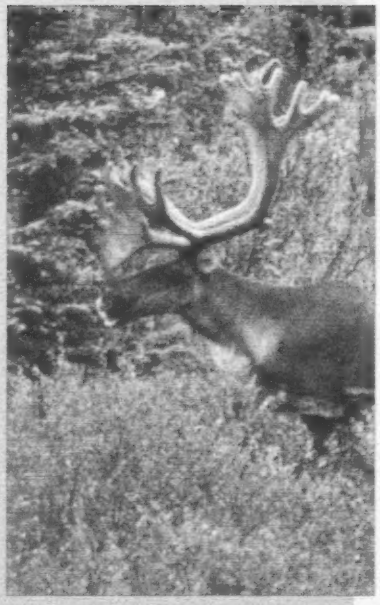


Photo by Nic Larter

Photo by Anne Gunn

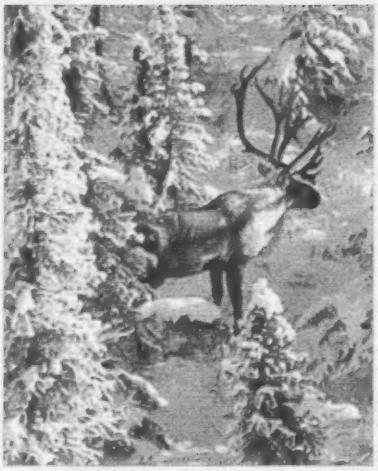


Photo by John Nagy

Photo by John Nagy

Action 1

Prepare and implement comprehensive boreal caribou range management plans in areas where development may create significant access or loss of habitat. Specific range management plans for boreal caribou habitat will provide guidance for the regulation of proposed and ongoing land use activities and development projects.

Action 2

Support the establishment of conservation zones to conserve habitat within the NWT through regional land use planning processes and the NWT Protected Areas Strategy.

Action 3

Continue to monitor distribution of boreal caribou using a combination of traditional knowledge and scientific studies to monitor movements. This may include use of resource selection modelling, or other data modelling analyses, to identify seasonally preferred habitats and responses to human disturbance.

Action 4

Determine vegetation regeneration rates and patterns for various types of disturbances across different habitat types and environmental conditions in the NWT to assist development of range management plans.

B. Population Monitoring and Management

At almost every community meeting about boreal caribou in the NWT, people supported continued monitoring of boreal caribou populations. Population monitoring is needed to guide management decisions and generate data on boreal caribou ecology.

Action 5

Establish long-term monitoring of adult female mortality and calf survival or track population trends to determine whether local boreal caribou numbers are increasing, decreasing or stable. This may include using: A) radio, satellite or GPS collars on adult cows; or, B) density estimates.

Action 6

In areas of the NWT where development may create significant access or loss of habitat, or where specific boreal caribou range management plans are being developed (see Action1), work with wildlife co-management boards to monitor harvests to ensure boreal caribou populations remain sustainable.

Action 7

In cooperation with harvesters, collect samples and comments (a piece of hide from their harvest, along with location, sex, numbers seen) and perform ongoing DNA analyses to better understand boreal caribou populations.

Photo by John Nagy

Photo by John Nagy

C. Disturbance Management

Photo by John Nagy

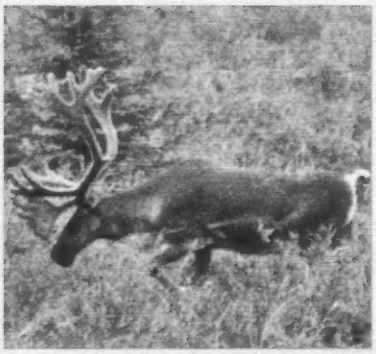


Photo by Nic Larter

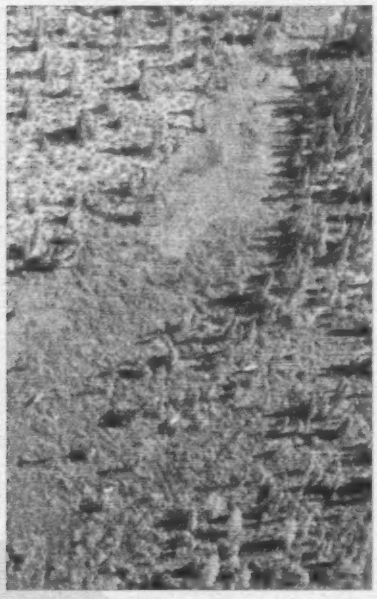


Photo by Deb Johnson

Many NWT residents stated concerns about the effects of oil, gas and timber development, as well as other smaller scale land use activities such as agriculture, tourism and mining, and the cumulative effects of these activities on boreal caribou. Of particular concern, from Inuvik to Hay River, were the effects of noise on boreal caribou (i.e. from pump stations or highway traffic), collisions with highway traffic and the apparent effects of cutlines or corridors on boreal caribou, their predators and other prey species. Management of these threats must be proactive to ensure the continued existence of boreal caribou in the NWT.

Action 8

Monitor the response of boreal caribou to land use activities, where appropriate, by tracking their movements and habitat use in relation to land use activities.

Action 9

Where possible, identify and map the impacts of various types of land use on boreal caribou range and habitat. Maintain a current database of all human disturbances on boreal caribou range, including seismic lines, roads, well sites, mine sites, transmission lines, trails, cutlines, forestry blocks, land leases and collision locations with highway traffic.

Action 10

Define what makes an effective travel corridor for predators. This may involve mapping the extent of vegetation regeneration of older cutlines and the locations of all recent cutlines to determine the stage of regeneration where a cutline or seismic line is no longer an effective travel corridor for predators. In some cases, defining corridors will have to be done on the ground, on a site-by-site basis.

Action 11

Develop best practices guidelines for industrial and commercial activities to manage or reduce/mitigate habitat impacts and sensory disturbances on boreal caribou. Guidelines may include appropriate thresholds for the acceptable amount of linear features, human development and natural habitat change at a scale relevant to boreal caribou in the NWT for specific regions.

D. Interaction with Other Wildlife Species

In every community in the southern portion of the NWT where discussions about boreal caribou were held, residents reported that new species are appearing. They expressed concerns about the interactions of these new species with existing wildlife. New species can bring new parasites and diseases. Local knowledge suggests the range of boreal caribou in the NWT has not significantly changed over time, with the exception of a few localities where densities of boreal caribou have decreased. These include areas where wood bison were introduced (Mackenzie Bison Sanctuary and surrounding areas) or where boreal caribou were over-hunted (e.g. Pine Point area). However, community residents consistently said there are definite interactions between boreal caribou and other wildlife (beavers, wood bison, muskoxen, wolves and bears) that are changing the local caribou distributions in many areas.

Action 12
Assess whether, and where, effects of other wildlife species on boreal caribou in other jurisdictions are applicable for the NWT.

Action 13
Track trends of prey species and carnivores in boreal caribou ranges where development may create significant access or loss of habitat. Include information from communities and industrial companies.

Action 14
Monitor and identify boreal caribou diseases and parasites.

Photo by Richard Popko

Photo by Richard Popko

E. Stewardship and Outreach

Photo by Deb Johnson

Photo by John Nagy

A clear message in community meetings was the conservation of boreal caribou and their habitat in the NWT is the responsibility of all residents. This Action Plan considers community concerns and opinions based on their traditional knowledge. The Action Plan will only be successful if knowledge and experience, both local and from elsewhere, continues to be shared. As we gain more information, this Action Plan will be adjusted and may be complemented by additional Action Plans. At a minimum, the Action Plan will be updated every five years.

Action 15
Involve community members in boreal caribou monitoring, conservation actions and field research, ensuring that the information collected is communicated to all community members.

Action 16
Encourage cooperative work with Aboriginal organizations, co-management boards, industry and others on stewardship activities.

Action 17
Promote awareness and knowledge of boreal caribou and boreal forest ecosystems among the public and industry operating within boreal caribou range in the NWT.

Action 18
Encourage NWT participation at national and international conferences on caribou to foster learning and networking opportunities.

F. Legislation, Policy, and Review

The Minister of Environment and Natural Resources is ultimately responsible for providing effective legal protection for boreal caribou, for meeting the goals of the national boreal caribou recovery strategy once it is completed, and for implementing the *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories* by working with co-management partners and others to achieve the goals stated in this Action Plan.

Action 19
With co-management partners, review NWT legislation and policy and enact regulations or directives to protect boreal caribou and their habitat as needed.

Action 20
Following the five-year time frame of this Action Plan, the Minister will prepare a report on the progress made towards meeting the goals, and the status and outcome of each action. The plan will be updated as needed.

Action 21
Continue to provide information on boreal caribou and their habitat to environmental assessment processes.

Photo by Richard Popko

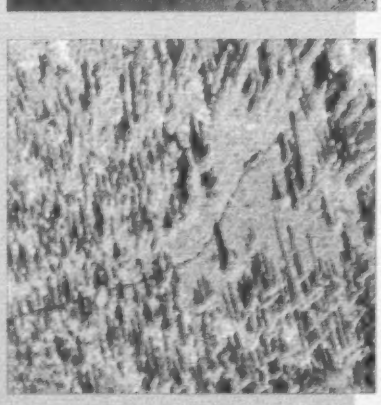


Photo by Deb Johnson

Next Steps

Photo by John Nagy

ENR will prepare a five-year Work Plan (2010 – 2015) to identify action priorities and continue implementation, with the help of the Tłı̨chǫ Government and wildlife management boards to determine their level of involvement.

Every effort will be made for the actions, and any new information resulting from these actions, to be considered within the environmental assessment and decision making processes of all key organizations whose decisions have an impact on boreal caribou habitat.

GLOSSARY

Boreal caribou (*Rangifer tarandus caribou*) – Caribou that live in the boreal forests of Canada. Boreal caribou are genetically different from migratory barren-ground caribou and behaviourally different from mountain woodland caribou. Genetically, boreal and mountain caribou are similar and are considered to be the same subspecies; they differ primarily in 'lifestyle'. Mountain caribou herd in groups that may number in the thousands and have different seasonal movement patterns. Boreal caribou tend to live in small groups and prefer different habitat types than mountain caribou.

COSEWIC – The Committee on the Status of Endangered Wildlife in Canada. This committee of experts assesses which wild species are in some danger of disappearing from Canada. Traditional knowledge is included, wherever possible, in making species assessments.

Cumulative effects – Changes to the environment caused by an action in combination with other past, present and future actions. For boreal caribou in the NWT, the largest anticipated management challenge involves the impacts of oil and gas development, along with other land use activities such as forestry, tourism and mining, and all of their interactions (or cumulative effects of all the impacts).

Development activities – An undertaking or part of an undertaking that is carried out on land or water.

Endangered species – A species listed under the federal *Species at Risk Act* as facing imminent extirpation or extinction.

Extinct – A species that no longer exists.

Extirpated – A species that no longer exists in the wild in Canada, but exists elsewhere in the wild.

Habitat – The area or type of site where an individual or wildlife species naturally occurs or depends on directly or indirectly to carry out its life processes.

Habitat loss – Permanent change to habitat that results in no current or future value for a species (e.g. conversion to agriculture, human settlement).

Historic range – Those geographic areas that a species was known or believed to occupy in the past.

Land use – Any use of land, water or other resources and associated activities, works and undertakings in the NWT that requires a land use permit, lease or license under any Act or Regulation.

Landscape – Unless the context indicates otherwise, is the land, water and resources, including air and all layers of the atmosphere above and the subsurface below.

Linear features – Any long, narrow area that has been cleared of vegetation or otherwise modified. Examples such as a road, trail, seismic line or right of way are modifications to the landscape, which are typically placed to provide access of one form of another. Features can range in length and width, but all are considered a corridor of some sort.

Range – The geographical limits of a species or group.

Recovery – The restoration of a species to self-sustaining population level, able to withstand random events and other environmental variables. This implies that human activities can be managed and/or habitat restored to allow a species to exist with no or little direct management.

Recovery strategy – An outline of population goals, objectives and approaches to be taken to reduce the threats to the survival of an endangered or threatened species and encourage recovery.

Sensory disturbance – Direct displacement or disruption to individual wildlife by people and their activities by the way of dust, sound, odour, vibrations, etc.

Stewardship – Actions to care for the environment, ranging from conserving wild species and their habitats directly to improving the quality of habitat by mitigating human impact. These types of conservation activities are essential to the recovery of species at risk and instrumental in preventing other species from becoming at risk.

Threatened species – A species listed under that federal *Species at Risk Act* as likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.

APPENDIX 1

Conservation and Management Activities Already Completed or Underway in the Northwest Territories

- Boreal caribou distribution and habitat use was assessed in the northern Mackenzie River valley (Inuvik and Sahtu Regions) using a mixture of satellite radio collars and GPS-satellite radio collars. Boreal caribou habitat suitability maps are currently being developed for the Inuvik and Sahtu Regions using resource selection functions. Inuvik and Sahtu studies were initiated in April 2002 and March 2003, respectively.
- Population trend (adult female survival and calf recruitment) is currently being monitored in the northern Mackenzie River valley using a mixture of conventional VHF collars, satellite radio collars and GPS-satellite radio collars. Study was initiated in March 2004.
- In the North Slave Region, a systematic aerial survey of grid blocks containing potential habitat in the Taiga Plains ecozone, to provide baseline density and presence/absence information for boreal caribou, was completed. This effort was followed-up with workshops in all the North Slave communities to collect local and traditional knowledge on boreal caribou extent of occurrence and area of occupancy, along with priority habitat sites.
- Population trend (adult female survival and calf recruitment) is currently being monitored in an area to the west of Hay River using a minimum sample size of 30 conventional VHF collars. Boreal caribou distribution and habitat use will also be determined, and predicted boreal caribou habitat will be mapped using resource selection function. Study was initiated in March 2003.
- A combination of satellite, GPS and conventional VHF collars have been deployed throughout the Mackenzie Valley areas of the Dehcho Region to assess boreal caribou distribution, daily/seasonal movements, home ranges and population trend by measuring adult survival and calf recruitment. These data will be used to produce regional maps and as part of the territorial-wide maps of resource and habitat selection

based upon RSF modelling. The study was initiated in 2004, with 10 collars deployed in the Trout Lake traditional areas and expanded to include traditional areas of Fort Simpson, Jean Marie River, Wrigley, Fort Liard and Nahanni Butte through 2005-2006. Since the start of the program, 69 adult female boreal caribou have been equipped with collars. Since 2006 there has been an average of 30 active (satellite and GPS) collars on female caribou in the study. Seven GPS and one satellite collar were deployed in February 2009. Calving and late-winter surveys have been flown annually since 2006.

- Baseline information on pregnancy rates, parasites and disease is being collected in conjunction with studies that use radio collars in the Dehcho, Inuvik, Sahtu and South Slave Regions.
- DNA material has been collected from NWT boreal caribou studies to quantify the genetic diversity within and gene flow among boreal caribou populations across the NWT.
- In September 2007, NWT-wide analysis began using individual-based modelling to determine sustainable or unsustainable levels of impact, evaluate the response of boreal caribou to anthropogenic linear features in areas with varying levels of development impact (reduced use/avoidance), and evaluate range fidelity and reproductive performance of boreal caribou in areas with varying levels of development impact and predation risk. Throughout the NWT, a range-wide resource selection function or habitat selection model will examine the degree of fragmentation and connectivity of selected or preferred habitats.
- A wildlife survey (boreal caribou one of the specific target species) of the Sambaa K'e candidate protected area was completed in March 2009.
- Facilitated by the Gwich'in Renewable Resources Board, a Traditional Knowledge study was completed in the Gwich'in, Inuvialuit and Sahtu land claim areas.
- Wek'èezhìi Renewable Resources Board will be engaging government partners in developing a comprehensive proposal for managing boreal caribou in the Wek'èezhìi area. The comprehensive proposal will be a process or framework to facilitate effective management.

For further information in a specific region of the NWT, please contact the appropriate regional office, or visit www.enr.gov.nt.ca.

Inuvialuit Settlement Region or Gwich'in Settlement Area

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North Slave Region or Wek'èezhìi

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APPENDIX 2

Development of the *Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories: 2010 – 2015*

- Started in 2005, the development of this Action Plan began with information sharing at the community and interest group level. Community and regional presentations outlined the current state of knowledge about boreal caribou in the NWT and the threats they faced, and asked for input on the information provided and potential conservation options.
- In 2006, the Department of ENR released the "*Are caribou important to you?*" boreal caribou conservation options booklet, based on scientific research, available traditional knowledge and community input, to outline available information, list major gaps in knowledge, identify major threats to boreal caribou in the NWT, and identify and discuss potential options for addressing those threats.
- In 2008, the "*Public Discussion Draft: Action Plan for Boreal Woodland Caribou Conservation in the Northwest Territories*" was released by ENR, which detailed specific actions to address threats and help conserve boreal caribou in the NWT.
- Additional community and local knowledge was collected and incorporated into the Action Plan by Environment and Natural Resources regional staff through research activities and community contacts, and by ENR staff attending the Joint Review Panel Hearings for the Mackenzie Gas Project.
- The date and location of major community and organization meetings are listed on the following pages.

Region	Date
Dehcho	
Jean Marie River	24 Feb 2006
Nahanni Butte	27 Feb 2006
Wrigley	10 Apr 2006
Trout Lake	13 Apr 2006
Ford liard	17 Jul 2006
Fort Simpson	17, 18 Oct 2006
North Slave	
Whati	16 Jan 2006
Gameti	19 Jan 2006
Behchoko	1 Feb 2006
Dettah	27 Mar 2006
Yellowknife	7 Dec 2006
Wek'èezhìi Renewable Resources Board (WRRB)	12 Dec 2008
South Slave	
Fort Providence Resource Management Board	8 May 2007
Hay River Métis Nation	15 Jan 2007
Hay River – West Point First Nation	23 June 2007
Fort Resolution Métis Council	24 June 2007
Hay River – NWT Métis Nation	4 July 2007
Hay River – K'atlodeeche First Nation Chief and Council	23 Jul 2007

Region	Date
Sahtu	
Sahtu Renewable Resources Board (SRRB)	13 Sep 2005
Deline	9 Feb 2006
Tulita	20 Sep 2006
Colville Lake	24 Oct 2006
Fort Good Hope	25 Oct 2006
Tulita	2 Nov 2006
Deline	1 Nov 2006
Gwich'in	
Gwich'in Renewable Resources Board (GRRB)	29 Sep 2005
Aklavik	13 Feb 2007
Fort McPherson	12 Feb 2007
Inuvik	22 Jan 2007
Tsiigehtchic	21 Feb 2007
Inuvialuit	
Wildlife Management Advisory Council (WMAC-NWT)	11 Sep 2005
Paulatuk	10 Jan 2007
Tuktoyaktuk	18 Jan 2007

ENR received and addressed 107 specific comments on the public discussion draft of the Action Plan. The final version of this Action Plan was significantly improved by:

- Canadian Association of Petroleum Producers (CAPP)
- Canadian Parks and Wilderness Society (CPAWS)
- Golder Associates Ltd., Yellowknife Office
- Gwich'in Renewable Resources Board (GRRB)
- Indian and Northern Affairs Canada
- Mackenzie Valley Environmental Impact Review Board (MVEIRB)
- Sambaa K'e Dene Band
- Sahtu Renewable Resources Board (SRRB)
- Wildlife Management Advisory Council (WMAC-NWT)
- Wek'èezhìi Renewable Resourcess Board (WRRB)
- World Wildlife Fund – Canada

APPENDIX 3

Organizations with management authority for boreal caribou in the Northwest Territories

- Gwich'in Renewable Resources Board
- Inuvialuit Wildlife Management Advisory Council (Northwest Territories)
- Sahtu Renewable Resources Board
- Wek'èezhìi Renewable Resources Board
- Environment Canada
- Parks Canada
- Tłı̨chǫ Government
- Environment and Natural Resources, Government of the Northwest Territories

NWT Species at Risk

Northwest Territories Environment and Natural Resources